

IN THE CLAIMS

Following is a complete and revised listing of the claims with status identifiers in parentheses and marked with underlines indicating insertions and strikethroughs indicating deletions. This revised listing is to replace all prior listings of the claims.

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1. (Currently Amended) An electronic circuit for bidirectional conversion of a high input voltage to a direct-current output voltage with indirect coupling, comprising:

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a primary converter;  
a common transformer including a plurality of primary windings and a single secondary winding; and  
a single secondary converter connected to the single secondary winding,  
wherein the primary converter includes at least three primary converter sections connected in series, wherein the output lines of which each of the at least three primary converter sections are each connected to a respective one of a the plurality of transformer primary windings of the common transformer, and wherein each primary winding of the common transformer is allocated one resonance capacitor.

2. (Currently Amended) The electronic circuit of claim 1, wherein the at least three primary converter sections ~~are each formed by~~ include one input four-quadrant regulator, at least one intermediate circuit capacitor and one half bridge.

[ 3. (Cancelled). ]

4. (Currently Amended) The electronic circuit of claim ~~[[3]]~~ 1, wherein ~~each transformer primary winding is allocated one~~ the series resonance capacitors form that forms an oscillating circuit with a leakage inductance coil of the common transformer.

5. (Currently Amended) The electronic circuit of claim 4, wherein ~~between the primary converter sections the~~ oscillating circuit has a relatively high efficient decoupling impedance.

6. (Currently Amended) The electronic circuit of claim 4, wherein a resonance frequency of the oscillating circuit is ~~higher or~~ at least equal to a switching frequency, ~~that occurs~~ occurring with the at least three primary converter sections and ~~that is~~ produced by the half bridge.

7. (Currently Amended) The electronic circuit of claim 1, wherein the high input voltage is one of an alternating-current and a direct-current voltage, ~~the primary converter being connected in series or parallel, depending on the height of the input voltage.~~

8. (Currently Amended) The electronic circuit of claim 4, ~~wherein~~ further comprising a resonance circuit ~~comprising~~ including the common transformer and a capacitor array ~~is provided, wherein~~ the capacitor array ~~having~~ includes a symmetrical magnetic and electric structure for lossless switching operation, and wherein the transformer, the capacitor array, and a respective resonance frequency and switching frequency are selected such that each of the primary converter sections are decoupled.

9. (Currently Amended) The electronic circuit of claim 8, wherein ~~the~~ each respective switching frequency ~~of semiconductor switching elements~~ is at least 1.2 times smaller than the resonance frequency.

10. (Currently Amended) The electronic circuit of claim 8, wherein ~~at for a given~~ resonance frequency, a ratio of impedances of the leakage inductance coil to the capacitor array is chosen so that an effective value of ~~the~~ an alternating voltage of the capacitor in nominal operation is at least 1/3 of ~~the~~ a no-load voltage of a transformer of a primary winding.

11. (Currently Amended) The electronic circuit according to claim 8, wherein mutual coupling of the transformer primary windings and ~~their~~ respective coupling to the ~~common~~ single secondary winding is a symmetrical magnetic coupling ~~which is~~ achieved in that the respective transformer primary windings have the same magnetic design and are arranged in the shape of discs between two of ~~the n+1~~ a plurality of secondary part windings of the single secondary winding that are connected in parallel or in series and that are linked to a secondary converter system, ~~which is~~ provided with a direct-current output voltage intermediate circuit.

12. (Currently Amended) The electronic circuit of claim 8, wherein control of the electronic circuit is devised in such a manner that residual asymmetries of the resonance circuit are compensated by a control which is performed by way of a mains four-quadrant regulator.

13. (Currently Amended) The electronic circuit of claim 12, wherein a superimposed intermediate circuit voltage control is realized by the four-quadrant regulator of the respective one of the primary converter sections, the intermediate circuit voltage control compensating a static residual asymmetry of the resonance circuit so that the intermediate circuit voltages of the primary converter sections can differ.

14. (Currently Amended) The electronic circuit according to claim 1, wherein the ~~transformer~~ primary converter and the secondary converter ~~may be operating~~ are operatable in synchronism and in ~~the~~ a resonant mode of operation, wherein, in a feed mode of operation, only

~~semiconductor~~ switches of any half bridges are clocked, whereas in a recuperation mode of operation, only ~~semiconductor~~ switches of the secondary converter are clocked.

15. (Currently Amended) The electronic circuit according to ~~claim 2, wherein a full bridge is utilized instead of the half bridge~~ claim 1, wherein the at least three primary converter sections each include one input four-quadrant regulator, at least one intermediate circuit capacitor and one full bridge.

16. (Currently Amended) The electronic circuit according to claim 12, wherein the electronic circuit is operatable ~~may be operated~~ in such a manner that, in case of failure in one of the primary converter sections, the ~~defective~~ failed converter section is set out of operation ~~by way of mechanical switches and that the remaining n-1 primary converter sections are capable of taking take over operation of the circuit.~~

17. (Currently Amended) The electronic circuit according to claim 1, wherein the circuit is designed in such a manner that the at least three primary converter sections ~~of the same kind~~ are operated directly from an AC mains through a switch and an input filter.

[18. (Cancelled).]

19. (Currently Amended) The electronic circuit of claim 1, wherein in order to achieve a uniform resonance circuit impedance, one additional inductance coil is provided in series with each transformer primary winding.

20. (Currently Amended) The electronic circuit of claim 17, wherein the input filter is designed as a choke.

21. (Currently Amended) The electronic circuit of claim 1, wherein the ~~electric~~ electronic circuit is for use in a power supply system for rail vehicles.

22. (Currently Amended) The electronic circuit of claim 8, wherein ~~the~~ each respective switching frequency of ~~semiconductor switching elements~~ is at least 1.4 times smaller than the resonance frequency.

23. (Currently Amended) The electronic circuit of claim 10, wherein ~~at~~ for a given resonance frequency, a ratio of impedances of the leakage inductance coil to the capacitor array is chosen so that an effective value of ~~the~~ an alternating voltage of the resonance capacitor in nominal operation is  $1/2$  of ~~the~~ a no-load voltage of a transformer of a primary winding.

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